
PART F
ROLLOVER PROTECTIVE STRUCTURES (ROPS)
FOR TRACTORS

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WAC 296-307-080 Rollover protective structures (ROPS) for tractors.

[Recodified as § 296-307-080. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-22-048, § 296-306A-080, filed 10/31/96, effective 12/1/96.]

WAC 296-307-08003 Which agricultural tractors are covered by this section? All agricultural tractors manufactured after October 25, 1976, must meet the requirements of WAC 296-307-080. An agricultural tractor manufactured on or before October 25, 1976, must meet the requirements of WAC 296-307-080 if:

- (1) The tractor was built or sold with rollover protective structures (ROPS) as an optional accessory; or
- (2) According to the manufacturer, the tractor was designed to accommodate the addition of ROPS.
[Statutory Authority: Chapter 49.17.040 RCW. 98-24-096 (Order 98-13), § 296-307-08003, filed 12/01/98, effective 03/01/99
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WAC 296-307-08006 What definitions apply to rollover protective structures (ROPS) for agricultural tractors?

“Agricultural tractor” means a two-wheel-drive or four-wheel-drive vehicle, or a track vehicle of more than twenty net engine horsepower, designed to furnish the power to pull, carry, propel, or drive implements that are designed for agriculture. All human-powered implements are excluded.

“Low profile tractor” means a wheel or track-equipped vehicle with the following characteristics:

- The front wheel spacing is equal to the rear wheel spacing, as measured between the centerlines of the wheels;
- The clearance from the bottom of the tractor chassis to the ground is eighteen inches or less;
- The highest point of the hood is sixty inches or less, and
- The tractor is designed so that the operator straddles the transmission when seated.

[Recodified as §296-307-08006. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-22-048, §296-306A-08006, filed 10/31/96, effective 12/1/96.]

WAC 296-307-08009 What requirements apply to the testing and performance of ROPS used on agricultural tractors? You must provide a rollover protective structure (ROPS) for each employee-operated tractor that is covered by WAC 296-307-080. ROPS used on wheel-type tractors must meet the test and performance requirements of OSHA 1928.52 CFR, Protective Frames for Wheel Type Agricultural Tractors, and

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ROPS used on track-type tractors must meet the test and performance requirements of SAE Standard J334a (July 1970) and the portions of SAE Standard J167 (1971) pertaining to overhead protection requirements.

[Statutory Authority: Chapter 49.17.040 RCW. 98-24-096 (Order 98-13), § 296-307-08009, filed 12/01/98, effective 03/01/99. [Recodified as § 296-307-08009. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-22-048, § 296-306A-08009, filed 10/31/96, effective 12/1/96.]

WAC 296-307-08012 What requirements apply to seatbelts used with ROPS on agricultural tractors?

- (1) Where ROPS are required by WAC 296-307-080, you must:
 - (a) Provide each tractor with a seatbelt;
 - (b) Require that each employee use the seatbelt while the tractor is moving; and
 - (c) Require that each employee tighten the seatbelt sufficiently to confine the employee to the ROPS protected area.
- (2) Each seatbelt and seatbelt anchorage must meet the requirements of ANSI/SAE J800 April 1986, Motor Vehicle Seat Belt Assemblies.
 - (a) Where a suspended seat is used, the seatbelt must be fastened to the movable portion of the seat.
 - (b) The seatbelt webbing material must be at least as resistant to acids, alkalis, mildew, aging, moisture and sunlight as untreated polyester fiber.

[Statutory Authority: Chapter 49.17.040 RCW. 98-24-096 (Order 98-13), § 296-307-08012, filed 12/01/98, effective 03/01/99. [Recodified as § 296-307-08012. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-22-048, § 296-306A-08012, filed 10/31/96, effective 12/1/96.]

WAC 296-307-08015 When are ROPS not required on agricultural tractors? ROPS are not required on agricultural tractors that are used as follows:

- (1) Low profile tractors used in orchards, vineyards or hop yards where the vertical clearance requirements would substantially interfere with normal operations, and for work related to these uses.
- (2) Low profile tractors while used inside a farm building or greenhouse in which the vertical clearance is insufficient to allow a ROPS equipped tractor to operate.
- (3) Tractors while used with mounted equipment that is incompatible with ROPS (for example, cornpickers, cotton strippers, vegetable pickers, and fruit harvesters).
- (4) Track-type agricultural tractors whose overall width (measured between the outside edges of the tracks) is at least three times the height of the rated center of gravity, and whose rated maximum speed in forward or reverse is not greater than seven miles per hour, when used only for tillage or harvesting operations, and which:
 - (a) Does not involve operating on slopes in excess of forty percent from horizontal; and
 - (b) Does not involve operating on piled crop products or residue (for example: Silage in stacks or pits); and
 - (c) Does not involve operating in close proximity to irrigation ditches, streams or other excavations more than two feet deep that contain slopes of more than forty percent from horizontal; and

WAC 296-307-08015 (Cont.)

(d) Does not involve construction-type operation, such as bulldozing, grading, or land clearing.
[Recodified as § 296-307-08015. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-22-048, § 296-306A-08015, filed 10/31/96, effective 12/1/96.]

WAC 296-307-08018 What employee training requirements apply to ROPS used on agricultural tractors?

- (1) You must ensure that every employee who operates an agricultural tractor is informed of the operating practices listed below and of any other practices dictated by the work environment. You must provide the information at the time of initial assignment and at least annually thereafter.

EXHIBIT A
EMPLOYEE OPERATING INSTRUCTIONS

1. Securely fasten your seat belt if the tractor has a ROPS.
 2. Where possible, avoid operating the tractor near ditches, embankments and holes.
 3. Reduce speed when turning, crossing slopes and on rough, slick or muddy surfaces.
 4. Stay off slopes too steep for safe operation.
 5. Watch where you are going, especially at row ends, on roads and around trees.
 6. Passengers, other than persons required for instruction or machine operation, shall not be permitted to ride on equipment unless a passenger seat or other protective device is provided.
 7. Operate the tractor smoothly-no jerky turns, starts, or stops.
 8. Hitch only to the drawbar and hitch points recommended by tractor manufacturers.
 9. When tractor is stopped, set brakes securely and use park lock if available.
- (2) You must ensure that every employee who operates an agriculture tractor is trained specifically in the operation of the tractor to be used. The training must include an orientation of the operator to the topographical features of the land where the tractor will be operated. Training must emphasize safe operating practices to avoid rollover.

- (3) The tractor training program must be described in the written accident prevention program required by WAC 296-307-030.

[Statutory Authority: Chapter 49.17.040 RCW. 98-24-096 (Order 98-13), § 296-307-08018, filed 12/01/98, effective 03/01/99. [Recodified as § 296-307-08018. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 97-08-051A, § 296-306A-08018, filed 3/31/97, effective 5/1/97; 96-22-048, § 296-306A-08018, filed 10/31/96, effective 12/1/96.]

WAC 296-307-08021 What other requirements apply to ROPS used on agricultural tractors?

- (1) You must ensure that batteries, fuel tanks, oil reservoirs, and coolant systems are constructed and located or sealed to ensure that no spillage comes in contact with the operator in the event of an upset.
- (2) All sharp edges and corners at the operator's station must be designed to minimize operator injury in the event of an upset.
- (3) When ROPS are removed, they must be remounted to meet the requirements of WAC 296-307-080.
- (4) You must ensure that each ROPS has a label, permanently affixed to the structure, that states:
- (a) Manufacturer's or fabricator's name and address;
 - (b) ROPS model number, if any;

WAC 296-307-08021 (Cont.)

(c) Tractor makes, models, or series numbers that the structure is designed to fit; and

(d) That the ROPS model was tested in accordance with the requirements of this section.

[Statutory Authority: Chapter 49.17.040 RCW. 98-24-096 (Order 98-13), § 296-307-08021, filed 12/01/98, effective 03/01/99.
[Recodified as § 296-307-08021. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-22-048, § 296-306A-08021, filed 10/31/96, effective 12/1/96.]

WAC 296-307-085 When must ROPS be provided for material handling equipment?

(1) This section applies to the following types of material handling equipment: Rubber-tired, self-propelled scrapers; rubber-tired front-end loaders; rubber-tired dozers; wheel-type agricultural and industrial tractors; crawler tractors; crawler-type loaders; and motor graders, with or without attachments, that are used in agricultural work. This section does not apply to side-boom pipelaying tractors.

(2) You must ensure that material handling equipment manufactured on or after October 25, 1976, is equipped with ROPS that meet the minimum performance standards of WAC 296-307-08009.

(3) ROPS and supporting attachments must meet the minimum performance standards of OSHA 1928.52 CFR, Protective Frames for Wheel Type Agricultural Tractors, or must be designed, fabricated, and installed in a manner that will support, based on the ultimate strength of the metal, at least two times the weight of the prime mover applied at the point of impact.

(a) The ROPS must be designed to minimize the likelihood of a complete overturn and to minimize the possibility of the operator being crushed in a rollover.

(b) The design must provide a vertical clearance of at least fifty-two inches from the work deck to the ROPS at the entrance.

(4) When ROPS are removed, they must be remounted so as to meet the requirements of this section.

(5) Each ROPS must have a label, permanently affixed to the structure, that states:

(a) Manufacturer's or fabricator's name and address;

(b) ROPS model number, if any;

(c) Tractor makes, models, or series numbers that the structure is designed to fit; and

(d) That the ROPS model was tested in accordance with the requirements of this section.

[Statutory Authority: Chapter 49.17.040 RCW. 98-24-096 (Order 98-13), § 296-307-085, filed 12/01/98, effective 03/01/99.
[Recodified as § 296-307-085. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-22-048, § 296-306A-085, filed 10/31/96, effective 12/1/96.]

WAC 296-307-090 What requirements apply to overhead protection for operators of agricultural and industrial tractors? This section applies to wheel-type agricultural tractors used in construction work and to wheel-type industrial tractors used in agriculture work.

(1) If grid or mesh is used for overhead protection, the largest permissible opening is 1.5 in. (38 mm.) in diameter. The overhead protection must not be installed in such a way as to become a hazard in the case of upset.

(2) All equipment used in site clearing operations must have rollover guards meeting the requirements of this chapter. You must ensure that rider-operated equipment is equipped with an overhead and rear canopy guard meeting the following requirements:

WAC 296-307-090 (Cont.)

- (a) The overhead covering is at least eighth-inch steel plate or quarter-inch woven wire mesh with openings no greater than one inch, or equivalent.
 - (b) The opening in the rear of the canopy structure is covered with not less than quarter-inch woven wire mesh with openings no greater than one inch.
- (3) Overhead protection that meets the provisions of SAE Standard J334 (July 1970) for rubber-tired dozers and rubber-tired loaders also meets the requirements of this standard.

[Recodified as § 296-307-090. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-22-048, § 296-306A-090, filed 10/31/96, effective 12/1/96.]